

We Claim:

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1. An intelligent trolley module for use in an assist system, comprising:
plurality of wheels;
an actuator for driving at least one of the wheels;
a computational node controlling actuation of the motor driving the wheels of the
trolley; and

5 a communication interface providing input/output communication with other
intelligent modules.

10 2. The intelligent trolley of claim 1 further wherein the actuator comprises a
gearing.

15 3. The intelligent trolley of claim 1 further wherein the actuator comprises a
motor.

4. The intelligent trolley of claim 1 further wherein the computational node
implements a virtual limit controlling motion of the trolley.

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20 5. The intelligent trolley of claim 1 further wherein the computational node
implements a virtual limit controlling motion of the trolley.

6. The intelligent trolley of claim 1 further comprising a roller.

25 7. The intelligent trolley of claim 1 further comprising a manually operable roller
release.

8. The intelligent trolley of claim 1 further comprising an automatic roller release.

9. The intelligent trolley of claim 1 further comprising a position indicator for indexing motion of the device.

10. The intelligent trolley of claim 9 where the position indicator comprises a hall
5 switch.

11. The intelligent trolley of claim 1 further utilizing odometry for monitoring the motion of the trolley.

10 12. An intelligent lift module for use in an assist device, comprising
 a support moving a payload;
 a computational node controlling movement of the payload; and
 a communication interface providing input/output communication with other
modules.

15 13. The intelligent lift module of claim 12 where the support comprises a cable.

14. The intelligent lift module of claim 12 where the cable is raised and lowered by a reel.

20 15. The intelligent lift module of claim 14 where the reel comprises a translating reel.

25 16. The intelligent lift module of claim 15 where the reel comprises a slidable translating reel.

17. The intelligent lift module of claim 15 where the reel further comprises a cam follower.

18. The intelligent lift module of claim 12 further comprising a replaceable guide unit containing a cam follower.
19. The intelligent lift module of claim 12 further comprising a position indicator.
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20. The intelligent lift module of claim 18 further comprising a hall switch.
21. The intelligent lift module of claim 18 further comprising a motor encoder.
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22. The intelligent lift module of claim 18 wherein the reel is indexed comprising a plurality of hall switches indexing multiple rotations of the reel.
23. The intelligent lift module of claim 12 comprising a virtual limit to the lift.
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24. An input device for use in an assist system, comprising:
a handle for gripping; and
at least one proportional control;
wherein the input device is in communication with a multi-function hub having a physical interface for providing mechanical support within the assist system, and wherein
20 the proportional control when pressed provides a proportional output signal to the hub.
25. The input device of claim 24 wherein the input device comprises a pendant.
26. The input device of claim 24 wherein the proportional control provides for an
up or down signal to lift a payload up or down respectively.
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27. The input device of claim 24 wherein the proportional button comprises a shaft to rotate a magnet in the vicinity of a hall effect sensor to create the proportional signal output.

28. The input device of claim 24 further comprising a plurality of conventional buttons that can be assigned specific functions.

5 29. The input device of claim 28 wherein the specific functions comprise stop and reset.